

Patent Claims

1. A flange connection between the face end of the longitudinal beam of a vehicle as a first component (1) and a carrier element, such as a crash box, which can be mounted to it in its longitudinal direction, as a second component (2), whereby a flange plate (3) is positively arranged at the one of these two components (1, 2) and a counter flange plate (4) at the other component, and these plates (3, 4) can be held tight to one another with their outer sides (5, 6) contacting each other, characterized in that, at the outer side (5) of the flange plate (3) protrudes at least one connection bolt (7) that exhibits a wedge slope (9), which stretches in the cross direction of said connection bolt (7) from its upper edge (10) at the upper side of the locking bolt (7) in the direction toward the flange plate (3), in that the counter flange plate (4) exhibits at the flange plate (3) a feed-through opening (12) for the connection bolt (7), and in that a locking component (15) can be placed on the inner side (13) of the counter flange plate (4), where in the connected position said locking component (15) surrounds the connection bolt (7) and establishes a wedge surface (18) that interacts with its wedge slope (9), and that exhibits at the side opposite this wedge surface (18) a clamping screw (21) that can be tightened against the connection bolt (7).
2. A flange connection as set forth in claim 1, characterized in that, the connection bolt (7) is arranged centrally at the flange plate (3).
3. A flange connection as set forth in claim 1 or 2, characterized in that, the connection bolt (7) exhibits a transverse groove (8) formed into the connection bolt (7) in the radial direction, with the flank of the groove positioned away from the flange plate (3) forming the wedge slope (9).
4. A flange connection as set forth in claims 1 - 3, characterized in that, the connection bolt (7) exhibits a square or rectangular cross-section, and in that one of the side surfaces of the connection bolt (7) forms a contact surface (22) for the clamping screw (21) at the locking component (15), whereby the wedge slope (9) is located at the side of the connection bolt (7) that is opposite the contact surface (22).
5. A flange connection as set forth in one of the claims 1 - 4, characterized in that, the locking component (15) has the shape of a closed ring.
6. A flange connection as set forth in claim 5, characterized in that, the locking component (15) has the shape of an angular ring, whereby the wedge surface (18) is located at a longitudinal bridge (17) at the inner side of one of the straight ring sections (16).
7. A flange connection as set forth in one of the claims 1 - 6, characterized in that, a protruding console (19), which exhibits a threaded hole (20) that receives the clamping screw (21), is formed in

one piece at the locking component (15) at the side that lies away from the contact side (23) for the counter flange plate (4).

8. A flange connection as set forth in one of the claims 1 - 7, characterized in that, the opening width of the feed-through opening (12) in the counter flange plate (4) is greater than the diameter of the connection bolt (7), and in that the locking component (15) is held at the counter flange plate (4) in a movable fashion parallel to its inner side (13).

9. A flange connection as set forth in claim 8, characterized in that, at the inner side (13) of the counter flange plate (4), support lugs (24) are arranged in a protruding fashion that are cranked and reach behind the locking component (15), and in that a play necessary for movement is provided between said support lugs (24) and the locking component (15).

10. A flange connection as set forth in one of the claims 1 - 9, characterized in that, the feed-through opening (12) of the counter flange plate (4) exhibits a width that is necessary for guiding the locking component (15) through, in a position different from the connected position.

11. A flange connection as set forth in claim 10, characterized in that, the feed-through opening (12) of the counter flange plate (4) is square or rectangular, whereby the width of the feed-through opening (12) in one of the longitudinal or cross directions or in one of the diagonal directions is greater than the outer width of the locking component (15).

12. A flange connection as set forth in one of the claims 1 - 11, characterized in that, the connection bolt (7) is positively arranged at the flange plate (3) and in that around the connection bolt (7) is arranged a bead (26) that is embossed from the outer side of the flange plate (3), by which the attachment region (28) of the connection bolt (7) is arranged recessed when compared to the remaining region of the flange plate (3) in the direction away from its outer side (5).

13. A flange connection as set forth in one of the claims 1 - 12, characterized in that, the clamping screw (21) of the locking component, which can be tightened against the connection bolt (7), is accessible from the outer side in its axial direction at the respective component (1 or 2).